Application Number: 10/687,529 Dkt. No.: 33637/US

Reply to O.A. of March 28, 2005

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the

application.

Listing of Claims:

1-15. (Canceled)

16. (Currently amended) An immersion sensor for measuring the concentration of at least

one analyte with the aid of an oxidase, wherein said immersion sensor comprises said oxidase in

an enzyme region covered by coupled on at least one side to an analyte-impermeable, oxygen-

permeable membrane having no analyte window, material and said enzyme region connected to

the surface of the sensor via at least one channel which contains water and is permeable to the

analyte, but due to its geometry limits diffusion.

17. (Original) The immersion sensor as set forth in claim 16, wherein the enzyme region

contains water.

18. (Currently amended) The immersion sensor as set forth in claim 16, wherein the at least

one channel comprises an at least one diffusion limiting channel and leads through an

impermeable material of the immersion sensor.

19. (Currently amended) The immersion sensor as set forth in claim 17, wherein said at least

one channel is filled, on or near adjacent to the surface of the sensor, with a porous substance

which is impermeable to proteins.

20. (Currently amended) The immersion sensor as set forth in claim 17, wherein on the

surface of the sensor, the channel passes into a protein-impermeable, hydrophilic layer and/or the

channel cross-section is larger than in the diffusion-limiting part.

21-23. (Canceled)

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24. (Previously Presented) The sensor according to claim 16, wherein the sensor is configured such that the analyte diffuses into the enzyme region.

25. (Previously Presented) The sensor according to claim 16, wherein the enzyme region is an enzyme layer.

26. (Canceled)

27. (Currently amended) The sensor according to claim [[26]] 16, wherein in an area limiting flow, a length of the channel exceeds a thickness of the membrane.

- 28. (Currently amended) The sensor according to claim [[26]] 16, wherein the enzyme layer borders an inner gas space of the sensor from within.
- 29. (Previously Presented) The sensor according to claim 28, wherein the inner gas space is connected to an oxygen reservoir.
- 30. (Currently amended) The sensor according to claim 28, wherein a thin the analyteimpermeable, oxygen-permeable membrane having no analyte window is situated between the enzyme layer and the inner gas space.
- 31. (Canceled)
- 32. (Previously Presented) The sensor according to claim 16, wherein the channel forms the only way of transporting analyte to the enzyme.
- 33. (Currently amended) The sensor according to claim 16, wherein a diffusion resistance of the analyte in said channel is determined by a ration ratio of a length of the diffusion path channel and a cross-section of the diffusion path channel.

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34. (Previously Presented) The sensor according to claim 16, wherein a length of the channel is between 0.1 mm and 1 mm.

- 35. (Currently amended) The sensor according to claim 16, wherein <u>said surface of said</u> sensor comprises a porous layer, said porous layer providing an increased effective cross-section of the channel on a surface of the sensor leads to a leveling out of, whereby outer concentration gradients <u>level out</u> thereby reducing the effect of outer deposits on diffusion flow.
- 36. (Previously Presented) The sensor according to claim 16, wherein the channel passes into a hydrophilic, porous and protein-excluding layer.
- 37. (Currently amended) The sensor according to claim 16, wherein the channel leads through a water-impermeable material and at a surface of the sensor is filled with a defined hydrophilic porous substance.